



Space Launch System

Highlights

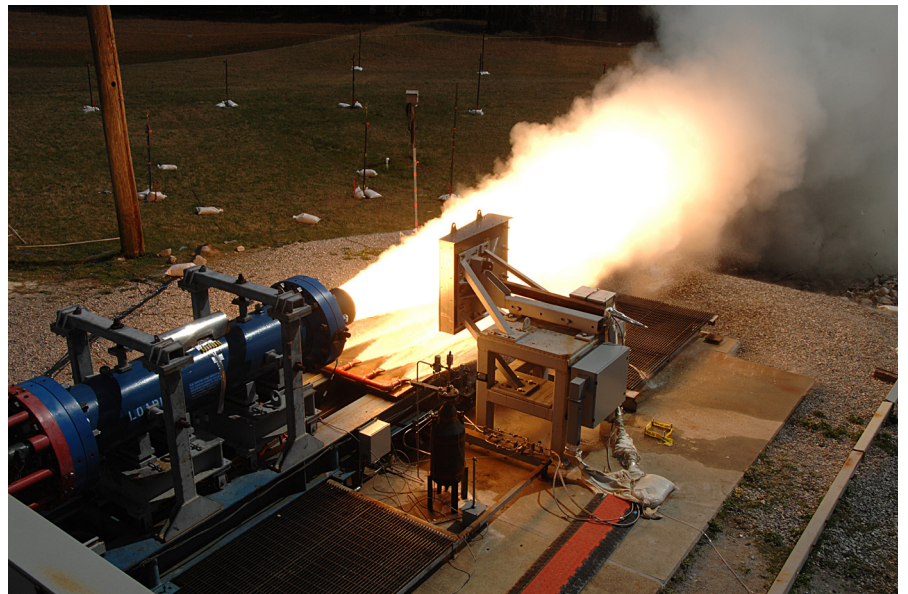
March 2012



Subscale Solid Rocket Motor Hot-Fired at Marshall

On Mar. 14, a scaled-down solid rocket motor (SRM) – 9 feet long and 2 feet in diameter – was successfully hot-fired for 20 seconds at Marshall Space Flight Center. It was one of many tests that will support the development of a full-scale five-segment SRM – the world's largest at 154 feet long and 12 feet in diameter – which will be produced for the first two flights of the SLS rocket.

This test was conducted to evaluate the performance of nozzle liner material for Qualification Motor 1 (QM-1), a full-scale SRM scheduled for testing in spring 2013. The results will also help engineers develop and evaluate analytical models and skills to assess future SRM tests.

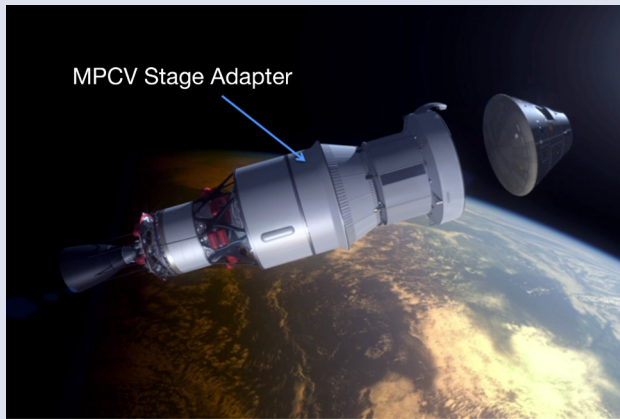


This subscale SRM was tested to support the development of a full-scale SRM to be used in SLS boosters. *Photo credit NASA/MSFC*

Value Stream Mapping Offers Potential Cost Savings

A value stream mapping (VSM) technique is being used by ATK to identify ways in which processes can be streamlined and optimized for manufacturing and assembling SLS boosters. Over 750 changes have been identified that should improve cycle times by nearly 50 percent and reduce projected costs by millions of dollars. VSM is now complete for the SRM in all major production areas, including metal refurbishment, insulation, propellant, nozzle, and final assembly.

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Artist's concept of Orion EFT-1. *Photo credit: NASA/JSC*

MSA Adapter Ring to Fly on EFT-1

The SLS and Orion Multi-Purpose Crew Vehicle (MPCV) Programs have signed a bilateral exchange agreement that allows the MPCV Stage Adapter (MSA) interface ring to be used during Orion's first Exploration Flight Test (EFT-1) in 2014. It will be part of the stack when the Orion spacecraft is launched on a Delta IV rocket during the EFT flights, as well as on the SLS rocket during mission flights.

The MSA is being designed once for both applications, as part of NASA's aggressive pursuit of affordable solutions for the human exploration of space. A layout drawing has already been baselined, allowing Marshall to procure machined and forged end-rings and order tooling to begin fabrication in-house.

Value Stream Mapping

(continued from page 1)

These process improvements received final approval from the SLS Boosters Office on Mar. 9, and they will be implemented during the fabrication and assembly of QM-1. Later this year, ATK will also propose VSM improvements for booster separation motor and test area processing.

NRA Released for SLS Advanced Development

A NASA Research Announcement (NRA) was issued on Mar. 20 for advanced development proposals for SLS in areas such as concept development, trades and analyses, propulsion, structures, materials, manufacturing, and avionics and software. Efforts will focus on keeping the SLS rocket affordable and sustainable as it evolves beyond the initial 70-metric ton vehicle configuration from Block 1 to 1A. NASA anticipates making multiple awards, with approximately \$48 million in total funding. The deadline to submit proposals is May 15, 2012.

"We look forward to hearing from both industry and academia on advanced development solutions that will enable the full capability of the evolved Space Launch System," said Mindy Niedermeyer, evaluation team chair. "These solutions will help bring humans farther in space than ever before by advancing the SLS design from the initial capability to subsequent block upgrades."



Contracting officer Monica Heidelberg discussed the NRA Model Contract at Marshall's SLS Advanced Development Industry and Academia Day. *Photo credit: NASA/MSFC*



SLS Chief Engineer Recognized by National Space Club

Garry Lyles has received the 2012 Astronautics Engineer Award from the National Space Club, a nonprofit organization that fosters excellence in space activity. Chosen in honor of his decades of service in engineering management of the nation's human spaceflight systems, Mr. Lyles was presented the award at the Dr. Robert H. Goddard Memorial Dinner in Washington on Mar. 30.

Marshall Welcomes NASA's Student Launch Projects

NASA's Student Launch Projects encourage students in middle school, high school, and college to design and build a reusable rocket, then launch it with a payload to 1 mile above ground level. This year, Marshall is proud to welcome 56 teams from 28 states – about 700 students in all. Many will learn about the SLS Program from speakers Sheri Kittredge, Deputy Manager, Liquid Engines; Tim Flores, Assistant Manager, Advanced Development; and Mike Rabban, systems engineer at Morris Auditorium on Thursday, Apr. 19.

These talented young people will display their rockets at Bldg. 4316 on Friday, Apr. 20, and the SLS Team is invited to come meet them and share a pizza lunch from 11 am to 1 pm. Launch Day will be held at Bragg Farms in Toney, Ala. on Saturday, Apr. 21.

In Aug. 2011, Garry Lyles became responsible for technical direction of all SLS program activities. Serving NASA in prominent leadership roles as a member of the Senior Executive Service, he has received the highest honors given for commitment to excellence in public service, including the Presidential Rank of Distinguished Executive Award. He joined Marshall after earning a mechanical engineering degree from the University of Alabama. *Photo credit: NASA/MSFC*



A Student Launch Project team shows off their rocket. *Photo credit: NASA/MSFC*

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